

**AMENDMENTS TO THE CLAIMS**

Please amend the claims as follows.

5        Claims 1-24 (canceled)

      Claim 25 (withdrawn): A composition comprising 16 $\alpha$ -bromo-3 $\beta$ -hydroxy-5 $\alpha$ -androstan-17-one, 16 $\alpha$ -bromo-2-oxa-3 $\beta$ -hydroxy-5 $\alpha$ -androstan-17-one, 16 $\alpha$ -bromo-3 $\beta$ -hydroxy-11-oxa-5 $\alpha$ -androstan-17-one or 16 $\alpha$ -bromo-3 $\beta$ -hydroxy-5 $\alpha$ -  
10 androstan-17-one hemihydrate and one or more nonaqueous liquid excipients, wherein the composition comprises less than about 3% v/v water.

      Claim 26 (withdrawn): The composition of claim 25 wherein the composition comprises less than about 0.3% v/v water.

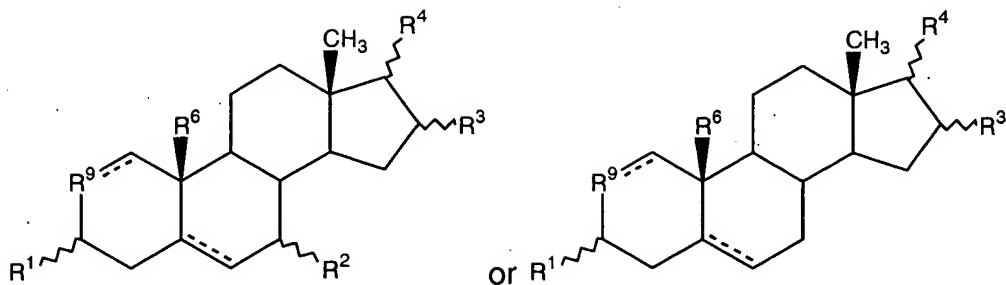
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      Claim 27 (withdrawn): The composition of claim 25 wherein the one or more nonaqueous liquid excipients are two or more of an alcohol, a polyethylene glycol, propylene glycol and benzyl benzoate.

20        Claim 28 (withdrawn): The composition of claim 25 wherein the composition is a parenteral formulation.

      Claims 29-79 (canceled)

25        Claim 80 (new): A method to treat or prevent an innate immune suppression condition in a human comprising administering to the human 1-10 mg/kg/day of a compound having the structure



wherein, the dotted lines are optional double bonds and the hydrogen atom at the 5-position, if present, is in the  $\alpha$ -configuration;

$R^1$  is  $-OR^{PR}$ ,  $-SR^{PR}$ , an ester, a thioester, a phosphoester, a phosphothioester, a phosphonoester, a phosphiniester, an ether, a thioether, a carbonate or a thioacetal;

$R^2$  is  $-OR^{PR}$ ,  $-SR^{PR}$ ,  $=S$ ,  $-CN$ ,  $=NOH$ ,  $=NOC(O)CH_3$ , an ester, a thioester, an ether, a thioether, an acyl group, a thioacyl group, a carbonate, a thioacetal, optionally substituted alkyl, optionally substituted alkenyl or optionally substituted alkynyl;

$R^3$  is  $-H$ ,  $-OR^{PR}$ ,  $=O$ ,  $-SR^{PR}$ ,  $=S$ ,  $-N(R^{PR})_2$ ,  $-N_3$ ,  $-CN$ ,  $-NO_2$ ,  $-F$ ,  $-Cl$ ,  $-Br$ ,  $-I$ , an ester, a thioester, a thioacetal, an ether, a thioether, a carbamate, a carbonate, optionally substituted alkyl, optionally substituted alkenyl or optionally substituted alkynyl;

$R^4$  is  $-OR^{PR}$ ,  $-SR^{PR}$ , an ester, a thioester, phosphate, a phosphoester, a phosphothioester, a phosphonoester, a phosphiniester, a sulfite ester, a sulfate ester, an ether, a thioether, a carbonate, a thioacetal or a polymer;

$R^6$  is  $-H$ , optionally substituted alkyl, optionally substituted alkenyl or optionally substituted alkynyl;

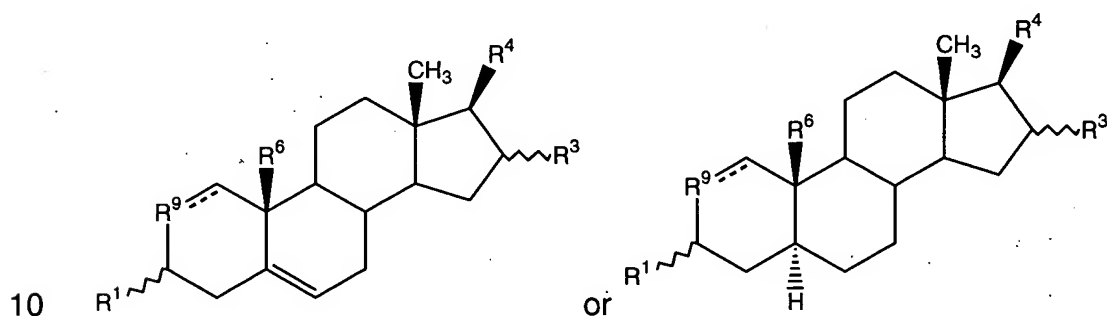
$R^9$  is  $-CHR^{10}$ - where  $R^{10}$  is  $-H$ ,  $-OR^{PR}$ ,  $=O$ ,  $-SR^{PR}$ ,  $=S$ , a halogen, an ester, an ether, a phosphoester, a carbonate, a thioacetal, a thioether, optionally substituted alkyl, optionally substituted alkenyl or optionally substituted alkynyl; and

$R^{PR}$  independently are  $-H$  or an independently selected protecting group, whereby the number or activity of neutrophils in circulation in the human is increased.

Claim 81 (new): The method of claim 80 wherein the innate immune suppression condition is associated with radiation, chemotherapy, aging, autologous bone marrow transplantation or stem cell transplantation.

5      Claim 82 (new): The method of claim 81 wherein the innate immune suppression condition is associated with the radiation or chemotherapy.

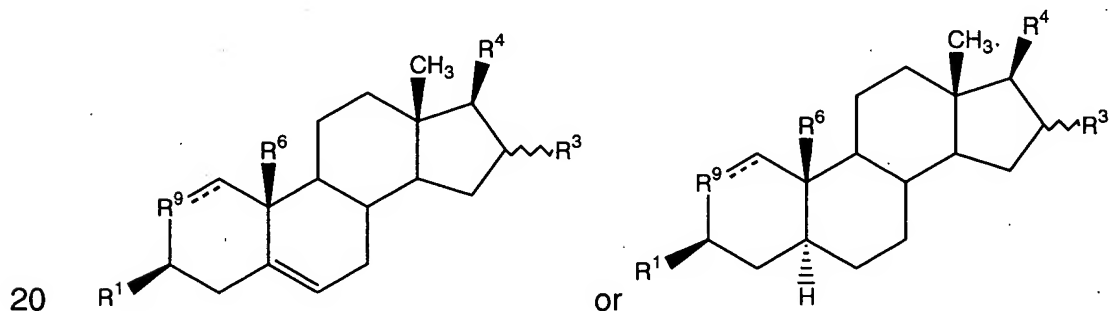
Claim 83 (new): The method of claim 82 wherein the compound has the structure



Claim 84 (new): The method of claim 83 wherein R<sup>1</sup> is -OH, -SH, an ester, an ether or a carbonate.

15      Claim 85 (new): The method of claim 84 wherein R<sup>4</sup> is -OH, -SH, an ester, phosphate, a phosphoester or an ether.

Claim 86 (new): The method of claim 85 wherein the compound has the structure



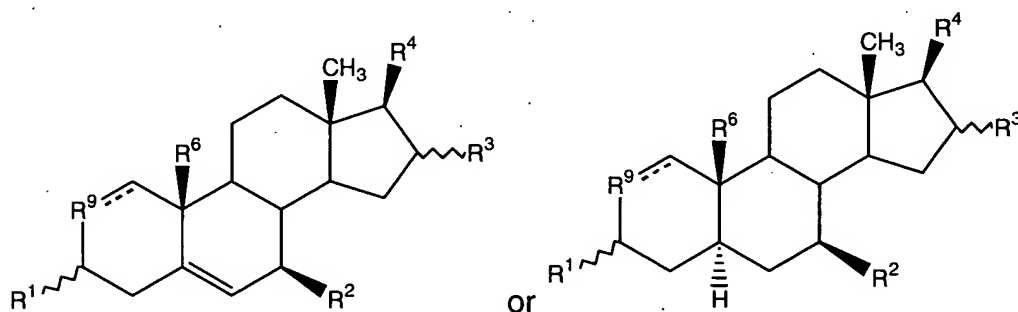
Claim 87 (new): The method of claim 86 wherein  $R^3$  is -F, -Cl, -Br, -I, -OH, =O, -SH, =S, an ester, an ether, a thioester, a thioacetal, a thioether, optionally substituted alkyl, optionally substituted alkenyl or optionally substituted alkynyl.

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Claim 88 (new): The method of claim 86 wherein  $R^9$  is  $-CH_2-$ ,  $-CH(OH)-$ ,  $-C(O)-$ , or  $-CHR^{10}-$ , wherein  $R^{10}$  is a halogen, an ester, an ether, optionally substituted alkyl, optionally substituted alkenyl or optionally substituted alkynyl.

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Claim 89 (new): The method of claim 82 wherein the compound has the structure



and  $R^2$  is -OH, an ester, an ether, optionally substituted alkyl, optionally substituted alkenyl or optionally substituted alkynyl.

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Claim 90. (new): The method of claim 82 wherein the compound is  $3\beta,17\beta$ -dihydroxyandrost-5-ene,  $3\alpha,17\beta$ -dihydroxyandrost-5-ene,  $16\alpha$ -fluoro- $17\beta$ -dihydroxyandrost-5-ene,  $16\alpha$ -fluoro- $17\alpha$ -dihydroxyandrost-5-ene,  $16\alpha$ -fluoro- $17$ -oxoandrost-5-ene,  $3\beta,7\beta,17\beta$ -trihydroxyandrost-5-ene,  $3\alpha,7\beta,17\beta$ -trihydroxyandrost-5-ene,  $3\beta,16\beta,17\beta$ -trihydroxyandrostane,  $3\beta,16\alpha,17\beta$ -trihydroxyandrostane or  $3\alpha,16\alpha,17\beta$ -trihydroxyandrostane.

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Claim 91 (new): The method of claim 90 wherein the compound is  $3\beta,17\beta$ -dihydroxyandrost-5-ene.

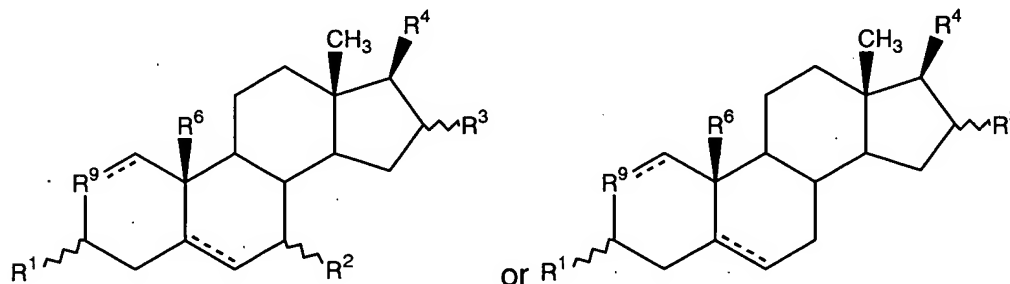
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Claim 92 (new): The method of claim 91 wherein the 3 $\beta$ ,17 $\beta$ -dihydroxyandrost-5-ene is administered daily for 3, 4, 5, 6 or 7 consecutive days.

Claim 93 (new): The method of claim 91 wherein the 3 $\beta$ ,17 $\beta$ -dihydroxyandrost-5-ene is parenterally administered for 5 consecutive days.

Claim 94 (new): The method of claim 93 wherein 50 mg, 75 mg, 100 mg, 150 mg, 200 mg, 250 mg or 300 mg per day of 3 $\beta$ ,17 $\beta$ -dihydroxyandrost-5-ene is administered.

Claim 95 (new): A method to treat or prevent an innate immune suppression condition in a non-human primate comprising administering to the non-human primate about 4-40 mg/kg/day of a compound having the structure



wherein, the dotted lines are optional double bonds and the hydrogen atom at the 5-position, if present, is in the  $\alpha$ -configuration;

R<sup>1</sup> is -OR<sup>PR</sup>, -SR<sup>PR</sup>, an ester, a thioester, a phosphoester, a phosphothioester, a phosphonoester, a phosphiniester, an ether, a thioether, a carbonate or a thioacetal;

R<sup>2</sup> is -OR<sup>PR</sup>, =O, -SR<sup>PR</sup>, =S, -CN, =NOH, =NOC(O)CH<sub>3</sub>, an ester, a thioester, an ether, a thioether, an acyl group, a thioacyl group, a carbonate, a thioacetal, optionally substituted alkyl, optionally substituted alkenyl or optionally substituted alkynyl;

R<sup>3</sup> is -H, -OR<sup>PR</sup>, =O, -SR<sup>PR</sup>, =S, -N(R<sup>PR</sup>)<sub>2</sub>, -N<sub>3</sub>, -CN, -NO<sub>2</sub>, -F, -Cl, -Br, -I, an ester, a thioester, a thioacetal, an ether, a thioether, a carbonate, a

carbamate, optionally substituted alkyl, optionally substituted alkenyl or optionally substituted alkynyl;

$R^4$  is  $-OR^{PR}$ ,  $-SR^{PR}$ , an ester, a thioester, phosphate, a phosphoester, a phosphothioester, a phosphonoester, a phosphiniester, a sulfite ester, a sulfate ester, an ether, a thioether, a carbonate, a thioacetal or a polymer;

$R^6$  is -H, optionally substituted alkyl, optionally substituted alkenyl or optionally substituted alkynyl;

$R^9$  is  $-CHR^{10}-$  where  $R^{10}$  is -H,  $-OR^{PR}$ ,  $=O$ ,  $-SR^{PR}$ ,  $=S$ , a halogen, an ester, an ether, a phosphoester, a carbonate, a thioacetal, a thioether, optionally substituted alkyl, optionally substituted alkenyl or optionally substituted alkynyl; and

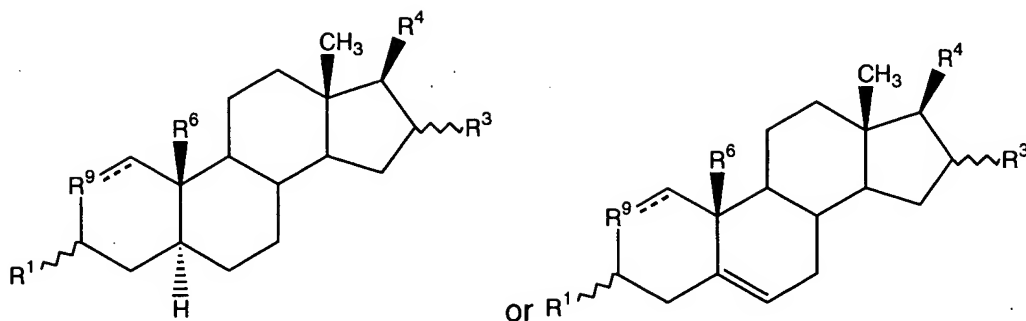
$R^{PR}$  independently are -H or an independently selected protecting group, whereby the number or activity of neutrophils in circulation in the non-human primate is increased.

Claim 96 (new): The method of claim 95 wherein the non-human primate is a cynomolgus monkey or a macaque monkey.

Claim 97 (new): The method of claim 96 wherein the innate immune suppression condition is associated with radiation, chemotherapy, autologous bone marrow transplantation or stem cell transplantation.

Claim 98 (new): The method of claim 97 wherein the innate immune suppression condition is associated with the radiation or chemotherapy.

Claim 99 (new): The method of claim 98 wherein the compound has the structure



Claim 100 (new): The method of claim 99 wherein R<sup>1</sup> is -OH, -SH, an ester, an ether or a carbonate.

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Claim 101 (new): The method of claim 100 wherein R<sup>4</sup> is -OH, -SH, an ester, phosphate, a phosphoester or an ether.

Claim 102 (new): The method of claim 101 wherein the compound is 3 $\beta$ ,17 $\beta$ -dihydroxyandrost-5-ene.

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Claim 103 (new): The method of claim 101 wherein the 3 $\beta$ ,17 $\beta$ -dihydroxyandrost-5-ene is administered daily for 3, 4, 5, 6 or 7 consecutive days.

Claim 104 (new): The method of claim 103 wherein the 3 $\beta$ ,17 $\beta$ -dihydroxyandrost-5-ene is parenterally administered for 4, 5 or 6 consecutive days.

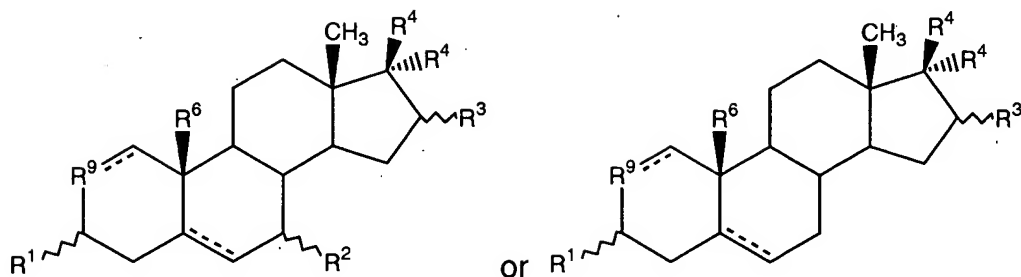
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Claim 105 (new): The method of claim 104 wherein the 3 $\beta$ ,17 $\beta$ -dihydroxyandrost-5-ene is administered for 5 consecutive days.

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Claim 106 (new): A method to treat or prevent an innate immune suppression condition in a human, wherein the method comprises administering an effective amount of a compound for 3 to 15 consecutive days to the subject, wherein the compound has the structure

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wherein, the dotted lines are optional double bonds and the hydrogen atom at the 5-position, if present, is in the  $\alpha$ -configuration;

$R^1$  is -H, -OR<sup>PR</sup>, -SR<sup>PR</sup>, an ester, a thioester, a phosphoester, a phosphothioester, a phosphonoester, a phosphiniester, an ether, a thioether, a carbonate or a thioacetal;

$R^2$  is -OR<sup>PR</sup>, =O, -SR<sup>PR</sup>, =S, -CN, =NOH, =NOC(O)CH<sub>3</sub>, an ester, a thioester, an ether, a thioether, an acyl group, a thioacyl group, a carbonate, a thioacetal, optionally substituted alkyl, optionally substituted alkenyl or optionally substituted alkynyl;

$R^3$  is -H, -OR<sup>PR</sup>, =O, -SR<sup>PR</sup>, =S, -N(R<sup>PR</sup>)<sub>2</sub>, -N<sub>3</sub>, -CN, -NO<sub>2</sub>, -F, -Cl, -Br, -I, an ester, a thioester, a thioacetal, an ether, a thioether, a carbamate, a carbonate, optionally substituted alkyl, optionally substituted alkenyl or optionally substituted alkynyl;

$R^4$  in the  $\beta$ -configuration is -OR<sup>PR</sup>, -SR<sup>PR</sup>, an ester, a thioester, phosphate, a phosphoester, a phosphothioester, a phosphonoester, a phosphiniester, a sulfite ester, a sulfate ester, an ether, a thioether, a carbonate, a thioacetal, or a polymer;

$R^4$  in the  $\alpha$ -configuration is -H, optionally substituted alkyl, optionally substituted alkenyl or optionally substituted alkynyl;

$R^6$  is -H, optionally substituted alkyl, optionally substituted alkenyl or optionally substituted alkynyl;

$R^9$  is -CHR<sup>10</sup>- where  $R^{10}$  is -H, -OR<sup>PR</sup>, =O, -SR<sup>PR</sup>, =S, a halogen, an ester, an ether, a phosphoester, a carbonate, a thioacetal, a thioether, optionally substituted alkyl, optionally substituted alkenyl or optionally substituted alkynyl; and

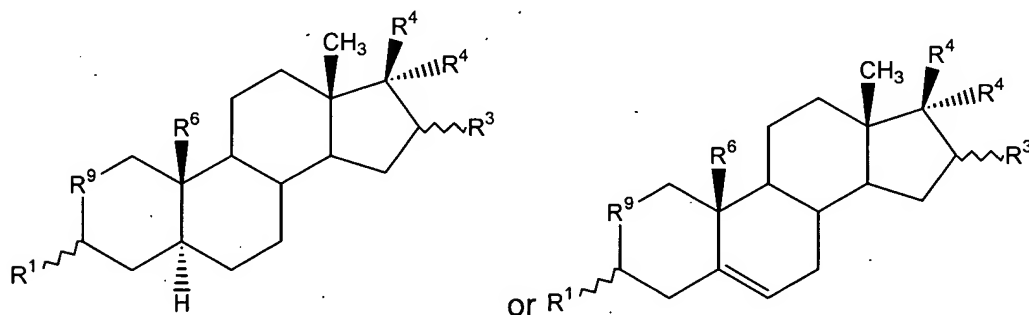


$R^{PR}$  independently are -H or an independently selected protecting group, whereby the numbers or activity of neutrophils in circulation in the human is increased.

5        Claim 107 (new): The method of claim 106 wherein the innate immune suppression condition is associated with radiation, chemotherapy, aging, autologous bone marrow transplantation or stem cell transplantation.

10        Claim 108 (new): The method of claim 107 wherein the innate immune suppression condition is associated with the radiation or chemotherapy.

Claim 109 (new): The method of claim 108 wherein the compound has the structure



15        Claim 110 (new): The method of claim 109 wherein  $R^1$  is -OH, -SH, an ester, an ether or a carbonate.

20        Claim 111 (new): The method of claim 110 wherein  $R^4$  is -OH, -SH, an ester, phosphate, a phosphoester or an ether.

25        Claim 112 (new): The method of claim 111 wherein  $R^3$  is -F, -Cl, -Br, -I, -OH, =O, -SH, =S, an ester, an ether, a thioester, a thioacetal, a thioether, optionally substituted alkyl, optionally substituted alkenyl or optionally substituted alkynyl.

Claim 113 (new): The method of claim 110 wherein the compound is 3 $\beta$ ,17 $\beta$ -dihydroxyandrost-5-ene, 3 $\alpha$ ,17 $\beta$ -dihydroxyandrost-5-ene, 16 $\alpha$ -fluoro-17 $\beta$ -dihydroxyandrost-5-ene, 3 $\beta$ ,7 $\beta$ ,17 $\beta$ -trihydroxyandrost-5-ene, 3 $\alpha$ ,7 $\beta$ ,17 $\beta$ -trihydroxyandrost-5-ene, 3 $\beta$ ,16 $\beta$ ,17 $\beta$ -trihydroxyandrostane, 3 $\alpha$ ,16 $\beta$ ,17 $\beta$ -trihydroxyandrostane, 3 $\beta$ ,16 $\alpha$ ,17 $\beta$ -trihydroxyandrostane or 3 $\alpha$ ,16 $\alpha$ ,17 $\beta$ -trihydroxyandrostane.

Claim 114 (new): The method of claim 113 wherein the compound is 3 $\beta$ ,17 $\beta$ -dihydroxyandrost-5-ene.

Claim 115 (new): The method of claim 114 wherein the 3 $\beta$ ,17 $\beta$ -dihydroxyandrost-5-ene is administered daily for 4, 5 or 6 consecutive days.

Claim 116 (new): The method of claim 114 wherein the 3 $\beta$ ,17 $\beta$ -dihydroxyandrost-5-ene is parenterally administered daily for 5 consecutive days.

Claim 117 (new): The method of claim 116 wherein about 1.0 mg/kg/day, about 1.5 mg/kg/day, about 2 mg/kg/day, about 2.5 mg/kg/day, about 3.0 mg/kg/day, about 4 mg/kg/day or about 6 mg/kg/day of the 3 $\beta$ ,17 $\beta$ -dihydroxyandrost-5-ene is administered.

Claim 118 (new): The method of claim 116 wherein 50 mg, 75 mg, 100 mg, 150 mg, 200 mg, 250 mg or 300 mg of the 3 $\beta$ ,17 $\beta$ -dihydroxyandrost-5-ene is administered each day.